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ABSTRACT

The extent of postsecondary remedial studies in the United States was investigated in 1983-1984, along with characteristics of current programs, and measures of program effectiveness. Reliable national estimates were sought on: the number and type of courses offered; the percent of students taking remedial courses and recent enrollment changes; and rough measures of remedial program outcomes (e.g., course completion and student retention). Remedial or developmental studies were defined as programs, courses, or other activities for students lacking skills needed to perform college-level work at the specific institution. The national sample of 511 colleges and universities was drawn from the Higher Education General Information System enrollment report of 1982. Eighty-two percent of the schools had at least one remedial/developmental course, and more colleges offered courses in remedial writing (73 percent) and math (71 percent) than in reading (66 percent). In addition to course enrollments, information was obtained on: the level and control of schools offering such studies, types of remedial support services and summer programs, type of credit and requirements, and student retention and program evaluation. (SW)

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Remedial/Developmental Studies in Institutions of Higher Education Policies and Practices, 1984

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The reported increase in remedial/development studies in recent years has been significant. The extensiveness and nature of remedial courses is an indicator of the level of achievement and preparation of high school students, admission standards, attempts to increase educational opportunity, and the quality of our postsecondary institutions in general. Thus, remediation is a significant variable to be reckoned with in any effort to raise academic standards.

Study Objectives

The objective of this study was to provide a national picture of the extent of remediation, characteristics of current programs and measures of program effectiveness at the college level. The study grew out of concerns expressed by many sources, including the National Commission on Excellence in Education and several state reports, concerning the deficiencies in basic skills of college-bound high school graduates.

Specifically the study focused on providing reliable national estimates of : 1) the number and type of courses offered; 2) the percent of students taking remedial courses; 3) changes in enrollment in recent years; 4) characteristics of remedial programs; and 5) rough measures of remedial program outcome (course completion, student retention and self-evaluation measures).

Study Background

Remedial education was estimated to be one of the fastest growing areas of the college curriculum during the 1970's.[1] In 1971, Davis reported that less than 50 percent of colleges had any kind of special course or instructional component designed for the high-risk student; however, by 1977 Roueche reported that 93 percent of community colleges and 78 percent of 4-year colleges returning his questionnaire were providing remedial courses.[2]

A Recurring Issue

While the growth of remedial courses and programs accelerated during the 1970's, reviews of the history of college level remediation indicate that the inadequate preparation of college-bound students is a recurring problem, rather than one of recent origins.[3] In the late 19th century, preparatory programs that were operated by the universities themselves served a similar purpose. It has been reported that in 1894 prepatory students comprised over 40 percent of entering students in American colleges.[4] These programs were considered pre-college; however, it was not uncommon for college credit to be given. While formal entrance

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[1] Magarrell, Jack. "Colleges Offer 15 Percent More Courses This Year," The Chronical of Higher Education," June 1, 1981, pp. 1-8.

[2] Davis, J. A. "The Impact of Special Service Programs for disadvantaged Students," Educational Testing Service, Princeton, N.J., 1975 as cited in Roueche, John and Snow, Jerry. Overcoming Learning Problems, San Francisco, Jossey Bass, 1977.

[3] California Postsecondary Education Commission. Remedial Education in California's Public Colleges and Universities, January 1983. The first chapter of this report presents a history of remediation in colleges in the U.S.

[4] Levine, Arthur. Handbook on Undergraduate Curriculum, San Francisco, Jossey-Bass, 1978, as cited in Remedial Education in California's Colleges and Universities, 1983.

requirements to colleges increased throughout the 19th century, Enright and Kerstiens report that colleges, under pressure to fill their classrooms, were often forced to accept students lacking these requirements. They indicate that in 1907 more than half the students entering Harvard, Yale, Columbia, and Princeton were reported as not meeting the formal entrance requirements.[5]

After 1920, colleges and universities usually encouraged 2-year colleges to do preparation and remediation. This practice continued into the 1960's. However, in the late 1950's, reports in the press indicated that two-thirds of all college freshmen lacked the reading skills necessary for college. It was also estimated that at this time only about 50 percent of entering freshmen completed 4 years of college.[6]

Those attempting to explain the rebirth and increase in basic skills courses in the 1970's have noted several factors. One often cited factor is the increase in the percent of high school students who are attending college. In 1960 about 18 percent of those aged 20 to 24 were in college; by 1970 the percentage was 26 percent. However, between the early 1970's and the 1980's the percent of graduating high school students entering college has not changed significantly. In 1972, about 45 percent of high school graduates were in college a year after high school graduation. In 1980, the overall figure was 46 percent.[7]

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[5]Enright, Gwyn and Kerstiens, Gene. "The Learning Center: Toward an Expanded Role," in Lenning O., ed., New Roles for Learning Assistance, San Francisco, Jossey-Bass, 1980.

[6]NCES. "Withdrawal From Institution of Higher Education," National Longitudinal Study, U.S. Government Printing Office, 1977.

[7]National Center for Education Statistics, Indicators of Education Status and Trends, January 1985.

Other related factors cited to explain the increase in remediation include: the transition to open admissions for many schools, a decline in high school requirements, and the decline in achievement levels of graduating high school students. These phenomena occurred at a time when the technological demands of the society were increasing. The California Postsecondary Education Commission report on remedial education in public colleges in California notes that: "These phenomena collided, and remedial courses and support activities services quietly appeared on campuses..."[8]

The Debate Over Remediation

The growth of remedial courses and services has not been without controversy, and this controversy has increased in recent years. There also appears to be movement against offering remedial or basic skills courses at certain schools. The Illinois legislature, for example, passed a resolution in 1977 which called for the reduction of remedial courses at the university level and for the concentration of any necessary remedial courses at the community college level by 1983. The resolution also specified that degree credit should not be given for such courses.[9] In 1984, the governor of Virginia publicly denounced remedial work in colleges as wasteful and called for higher admission standards as a way of reducing remediation. In the same year the State of Maryland reported they had instituted higher admission standards and had declines in remedial English enrollment.[10]

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[8]California Postsecondary Education Commission, p. 8.

[9]Illinois State Board of Higher Education. "Status Report of Remediation in Higher Education," Springfield, June 1981.

[10]Feinberg, Lawrence. "Remediation Work Seen as Erosion of Education," Washington Post, April 29, 1984.

The State of New Jersey has taken a somewhat different approach. This approach has involved the establishment of Basic Skills council with the legal mandate to test the basic skills of all students entering public colleges and to encourage the requiring of remedial courses for all students deficient in basic skills. A key component of the program is to work with the high schools to foster increased emphasis on basic skills. In 1983, for the first time since the start of the program in 1977, the Council reported a decrease in the percent of entering students found to be deficient in the areas tested.[11]

The debate and controversy associated with remediation is related to the variety of labels that schools across the country have used for "remedial" courses. Among the differing names used are: compensatory, basic skills, foundation, equal opportunity, developmental, corrective education, and fundamental courses as well as simply math, writing or reading courses. This labeling is not only a function of remedial program organization, structure and targeted groups, but also public perception, state and university policy and other factors. (For discussion of the definition of remedial courses used in this survey see the methodology section)

In discussions of remedial education, concerns for equal opportunity and providing education to as many people as possible are often viewed as conflicting with interest in maintaining higher standards and curtailing cost of services. The Commission on Excellence in Education has noted that these goals should not be mutually exclusive. They state that:

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[11] New Jersey Basic Skills Council. "Results of the New Jersey College Basic Skills Placement Testing and Recommendations on Instruction and Curriculum, Fall 1983.

> We do not believe that a public commitment to educational reform must be at the expense of a strong public commitment to equitable treatment of our diverse population. Our goal must be to develop the talents of all to their fullest. Attaining that goal requires that we expect and assist all students to work to the limits of their capabilities.[12]

Recent Studies

The controversy surrounding remediation at the college level and the differing approaches of the various states have increased the interest in obtaining a national picture of college remediation programs. Two national studies were completed in the early 1980's, each collecting data for 1981.[13] The first was conducted by the Instructional Resource Center at CUNY and the second by Roueche, Baker and Roueche, at the University of Texas. The CUNY study found that almost one third of students were viewed as needing remediation in each of three areas (reading, writing and math). Both studies found that about 90 percent of institutions responding to their survey had at least one basic skills course. However, the relatively low response rate of these studies (45 percent for CUNY and 60 percent for Texas) raises the possibility of potentially serious nonresponse bias.

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[12] National Commission on Excellence in Education. A Nation at Risk, U.S. Department of Education, April 1983, p. 13.

[13] Instructional Resource Center, CUNY "Assessment and Improvement of the Academic Skills of Entering Freshmen Students: A National Survey," New York, September 1983. This report provides extensive information on placement/assessment procedures of responding schools.

Roueche, Susan, "Elements of Program Success: Report of a National Study, in a New Look at Successful Programs, ed. John Roueche, Jossey-Bass, San Francisco, 1983 and Roueche, J.E., Baker, G.A., and Roueche, S.D. College Reponse to Low Achieving Students: A National Study, New York, Harcourt, Brace Jancovich, Media System 1984. This study focused on characteristics of successful programs (those reporting higher retention). They report that the major elements of success included; strong administrative support, mandatory assessment and placement, structured courses, award of credit, flexible completion strategies, multiple learning systems, volunteer instructors, peer tutors, monitoring student behavior, interfacing courses, and program evaluation.

Questions have also been raised as to whether the reaction against remediation at the college level has impacted the percent of schools offering courses and the extensiveness of enrollment in the last four years since these studies were completed. The aim of the NCES study was to collect updated national information on extensiveness and characteristics of remediation.

Methodology

Questionnaire Design

The definition of remedial/developmental studies used in the survey was of considerable importance to the study design. The definition printed on the survey form of remedial/developmental studies was as follows:

> Program, course, or other activity (usually in the area of reading, writing, or math) for students lacking those skills necessary to perform college level work at the level required by your institution. Throughout this questionnaire these activities are referred to as "remedial/developmental;" however, your institution may use other names such as "compensatory," "basic skills," or some other term. Please answer the survey for any activities meeting the definition above, regardless of name; however, do not include English as a Second Language when taught primarily to foreign students.

This definition has two important aspects. First, the definition encompasses developmental studies for students who may never have taken a course in the subject area. The emphasis is on whether students have the required skills not on their educational background. Second, the identification of students lacking the skills necessary to perform college level work is a function of the selectivity of the institution and not a uniform standard. What is considered remedial in one institution may not be so identified in another.

In order to get full and complete measures of the extent of remediation a variety of measures were requested on extensiveness, characteristics and outcome of remedial programs. With regard to extensiveness, these included both the percent of freshmen enrolled in courses and the total course hours of remediation. Generally, students enrolled in remedial courses are also enrolled in nonremedial coursework. From this perspective, the percent of students enrolled in remedial courses 'overstates' the prevelence of remediation. Student course hours of remediation expressed as a percent of total student course hours is a useful summary measure of the extensiveness of remediation at the most basic level.

Sample Design and Survey Implementation

A national sample of 511 colleges and universities was drawn from the universe of 3238 colleges and universities contained in the National Center for Education Statistics (NCES), Higher Education General Information System (HEGIS XVII) Fall Enrollment and Compliance Report of Institutions of Higher Education of 1982. The universe file was stratified by enrollment size and control, then sorted by type and region.[14] The sample was selected with probability proportional to the square root of enrollment size. The survey form was mailed in August of 1984 and telephone followup of data collection continued until the end of October.

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[14]This procedure was followed for colleges with predominatly non-minority enrollment. Because of the small number, minority schools were simply sorted by the four variables (size, control, type, and region); they also were selected with probability proportional to the square root of size.

The suvey was addressed to the president of the institution with the request that it be completed by the person designated most knowledgeable about remedial/developmental programs. An overall response rate of 96 percent was obtained.[15]

The response data were weighted to produce national estimates and a weight adjustment was made to account for survey nonresponse. The weights were calculated for each school inversely proportional to their square root of size. These weights ranged from 1.0 to 40.73. A balanced half-sample replication method was used to compute sampling errors of the statistics (Table 8 presents the sampling errors for selected questionnaire items.)

Survey Findings

Course Offerings

The survey found that in 1983-84, most schools (82 percent) reported offering at least one remedial/developmental course (Table 1). More colleges offered courses in remedial writing (73 percent) and math (71 percent) than in reading (66 percent).[16]

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[15] Of the total sample, 27 schools were determined to be out of scope because they did not have freshmen students and 2 were closed. The weighted total of schools from the sample is thus 2,785, somewhat lower than the universe file of 3,238.

[16] These percents are somewhat lower than the CUNY study of 1981, which reported that 83 percent offered basic reading, 91 percent basic writing and 87 percent basic math. The differences may be due to overresponse of schools having basic skills programs to the CUNY study and the fact that CUNY used the term "basic" rather than "remedial/developmental."

While public, 2-year and open admission schools more frequently offered courses, a majority of private, 4-year and selective schools also had at least one course.[17] The comparisons are as follows:

- 94 percent of public and 70 percent of private schools had remedial courses;
- 88 percent of 2-year and 78 percent of 4-year had remedial courses; and
- 91 percent of open and 68 percent of selective had remedial courses.

Colleges having courses in a given subject typically offered only one or two separate courses. On the average, 1.8 courses were offered in remedial writing, 1.9 in reading and 2.0 in math. Only about 10 percent of colleges offered four or more courses in a subject. Public, 2-year and open admission schools on the average offered about one more course in each area than did private, 4-year and selective schools.

Enrollment in Remedial/Developmental Courses

The study found that nationwide in 1983-84, one quarter (25 percent) of all college freshmen took one or more courses in remedial math. Almost as many, 21 percent took remedial writing and 16 percent took remedial reading. Of the estimated 2,300

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[17] Colleges were classified based on the selectivity of their admission criteria according to the Chronicle Two-Year College Databook, and Chronicle Four-Year College Databook, 1984 published by Chronicle Guidance Publications Inc., Moravia, New York. The classifications are defined by the Chronicle Data Books as follows: open schools accept all high school graduates; liberal schools accept some students from the lower half of high school class; traditional schools accept all students from the top half of class and; selective schools prefer students in the top 25 percent.

schools having remedial courses almost two-thirds (63 percent) reported that remedial enrollment had increased by more than 10 percent since 1978. Another 33 percent reported that enrollment had stayed about the same and 4 percent reported a decline. Increases were less however, for 4-year private, traditional and selective schools (table 2).

Differences in the percent of students enrolled reflect the tradition of having preparatory and remedial work more frequently done at 2-year, public and open admission schools. The comparisons of percent of freshmen students enrolled in one or more course for remedial math are as follows:

- 27 percent of freshmen in public colleges and 15 percent of freshmen in private colleges;
- 28 percent in 2-year colleges and 19 percent in 4-year colleges;
- 30 percent in open colleges and 13 percent in selective and traditional admission colleges.

Viewed from a different perspective, the enrollment data show what colleges remedial students are likely to attend. For example, 85 percent of all first-year students attend public colleges, but about 90 percent of all remedial students in each subject (reading, writing, and math) are enrolled in public schools (table 3). Similarly, 2-year and open admissions colleges enroll slightly less than two-thirds of all first-year students, but almost three-quarters of the first-year remedial students.

Extensiveness of remediation can also be measured by what portion remedial reading, writing, and math course hours are of the total course hours for first-year students. Since first-year remedial students typically take several other courses at the same time (according to studies by Roueche and others), a

remedial coursework constituted a smaller percentage of total first year course hours than the percent of all first year students enrolled in a remedial course -- only about 5 percent of the total hours for all first year students (table 3). The percent of total first year hours for public schools was 6 percent and 3 percent for private schools.

Selected Characteristics of Remedial Programs

In addition to courses in basic skills areas, schools usually offer remedial support services such as diagnosis, learning assistance labs, tutoring and counseling. Almost all schools (90 percent) reported having at least some of these services. Overall about one-third (33 percent) of schools reported having a separate department or division devoted to remedial developmental studies. The percentage having a department or division was highest for public (47 percent), 2 year (43 percent) and open admission (45 percent) colleges and universities.

About one-quarter (24 percent) of schools reported having a special pre-admission summer program that consisted of more than just a regular remedial course which is offered in the summer. In schools offering this type of program the average percent of students enrolled was 8 percent (data not shown on table). Unlike the case with regular remedial courses; 4 year, traditional and selective schools more frequently reported offering this type of program than did 2 year and open admission schools (table 4). About one-third of traditional and selective schools had a pre-admission summer program.

While remedial courses are most frequently offered in the basic skills areas of reading, writing, and math over half of the schools (58 percent) offered additional remedial courses in student development and 21 percent offered additional remedial

courses in academic areas other than reading, writing or math (table 4). For those schools having student development courses and those schools having other academic courses the average number of courses offered was just under 3 (2.9 for student development and 2.8 of other academic subjects; (data not shown on table).

Type of Credit and Requirement Status

An issue of much discussion in planning remedial programs concerns whether and what type of college credit should be awarded. Certain research has found that remedial courses giving credit are more successful because of increased student motivation.[18] Others have viewed this as a lowering of college standards.

The majority of schools (about 70 percent) do not award degree credit for any remedial courses. The most frequent type of credit given for remedial courses is institutional credit, which counts in determining enrollment status and is part of a students record but does not count towards a degree or certificate completion. Overall slightly more than half of schools reported awarding this type of credit for remedial reading, writing, and math. Using writing as an example, 53 percent reported awarding institutional credit, 25 percent elective degree credit, 6 percent subject degree credit and 16 percent awarded no formal credit. Statistics were very similar for reading and math.

In the majority of schools offering remedial programs the courses were required if the student did not meet certain requirements, rather than voluntarily taken. Remedial writing

[18] Roueche, Susan, "Elements of Program Success: Report of a National Study" in a New Look at Successful Programs, ed John Roueche, Jossey-Bass, San Francisco, 1983.

courses were mandatory in 64 percent and remedial math was mandatory in 59 percent of schools offering the courses. Remedial reading courses were mandatory in about half (51 percent) of the schools offering the course. Remedial courses were mandatory in a larger percent of 4 year than 2 year schools and in a larger percent of private schools than public schools (table 5).

Program Evaluation and Retention Data

Respondents were asked to evaluate the success or effectiveness of several aspects of their remedial programs on a scale of 1 to 5. A rating of 1 indicated low evaluation and a rating of 5 indicated high evaluation. Ratings were obtained for aspects of remedial programs in each of 4 areas: courses, support services, organization and policy, and outcome for remedial students. Most respondents rated their programs moderately high, with an overall average rating of 3.8 (table 6). Highest ratings were given to teacher attitude, teacher training and curriculum content and structure. Each of these had average ratings of 4 or higher. Lowest ratings were given to program evaluation, degree completion rate, and breadth of course offerings. Thirty percent of respondents gave program evaluation a below average (1 or 2) and 19 percent of respondents gave degree completion a below average rating.

To obtain further measures of remedial program outcomes, respondents were asked information on remedial course completion rate and program retention to the second year. Almost three-fourths of students were reported to have successfully completed remedial reading courses. Seventy-one percent completed remedial writing and 68 percent completed remedial math (table 7).

A key indicator of remedial program success is the extent to which remedial students are able to successfully complete non-remedial subjects and remain within the college or university. Review of past surveys of remedial programs indicated that this information is difficult to obtain. For this reason respondents were asked to indicate whether they maintained records on the percent of students retained to the second year, for total freshmen and for those taking remedial courses.

Sixty-three percent of colleges reported they kept records on the percent of total freshmen retained but only 35 percent reported they kept separate records on the percent of remedial students retained. Retention records were more frequently kept by 4-year than 2-year schools. This is related to the fact that 2-year schools have a larger percent of part time students, for which retention information is difficult to collect and interpret.

For both schools keeping records and not keeping records students taking one or more remedial courses were reported retained at only a slightly lower rate than total freshmen (table 7). Overall 65 percent of total freshmen and 58 percent of remedial freshmen were reported retained to the second year. For those schools keeping records, 64 percent of total freshmen were reported retained and 60 percent of students taking one or more remedial courses were reported retained. Schools not keeping records reported an estimated 57 percent retained for total freshmen and 55 percent for remedial students overall.

Educational Significance

Because of the variety of estimates on the extensiveness of remediation obtained in this survey and the high response rate, this study provides useful baseline information from which future change can be measured.

One measure which is likely to be followed on a periodic basis in the future is the percent of freshmen enrolled in remedial subjects. This has been included in a recent publication Indicators of Education Status and Trends (U.S. Education Department - January 1985) as a significant indicator of the transition between high school and college.

Collecting this information is not enough, however, further study will be needed to assess the reasons for any changes in the percent enrolled over time. These reasons might include changes in the percentage of high school graduates attending college, adequacy of high school preparation, student aptitude, student choice of college, college entrance standards and the rigor of entry level courses, and the availability of remedial courses. Together, this information will provide for a more accurate assessment of the transition between high school and college.

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Table 1.--Percent of institutions of higher education offering remedial courses and average number of courses offered in remedial reading, writing, and math, by control, type of institution, and admission criteria: United States, 1983-84

Institutional characteristics	Number of institutions having freshmen students	Percent having one or more remedial courses				Average number of courses offered		
		Any course	Reading	Writing	Math	Reading	Writing	Math
All colleges	2,785	82	66	73	71	1.9	1.8	2.0
Control								
Public	1,419	94	87	89	88	2.2	2.1	2.5
Private	1,366	70	44	56	53	1.3	1.3	1.3
Type of institution								
2-year	1,295	88	80	78	82	2.2	2.2	2.5
4-year	1,491	78	53	69	61	1.5	1.4	1.5
Admission criteria								
Open	1,259	91	87	83	85	2.2	2.1	2.5
Liberal	714	72	54	61	64	1.5	1.5	1.5
Traditional	354	80	52	75	65	1.4	1.3	1.4
Selective	459	68	37	62	48	1.5	1.5	1.6

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Table 2.--Reported change in enrollment since 1978, and percent of freshmen students enrolled in remedial reading, writing, and math courses, by control, type of institution, and admission criteria: United States, 1983-84

Institutional characteristics	Percentage distribution: reported change in enrollment since 1978			Percent freshmen students enrolled in remedial		
	Increased 10% or more	Stayed about the same	Decreased 10% or more	Reading	Writing	Math
All colleges	63	33	4	16	21	25
Control						
Public	70	26	5	18	22	27
Private	54	42	4	9	12	15
Type of institution						
2-year	69	27	5	19	23	28
4-year	58	38	4	12	17	19
Admission criteria						
Open	72	24	4	20	24	30
Liberal	57	39	4	14	17	18
Traditional	54	39	7	9	13	13
Selective	48	48	4	6	14	13

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Table 3. -- Percentage distribution of estimated first year students and total estimated remedial students in reading, writing and math by control, type of institution and admission criteria: United States, 1983-4 School Year.

Institutions of Higher Education Characteristics	Estimated First Year Students (in millions)	Percent of Total: First Year Students	Remedial Reading Students	Remedial Writing Students	Remedial Math Students	Estimated percent of total first-year course hours which are remedial[1]
All Colleges/Universities. .	4.8	100	100	100	100	5.3
Control						
Public	4.1	85	92	91	91	5.8
Private.	.7	15	8	9	9	2.8
Type of Institution						
2-Year	3.0	63	73	70	71	6.1
4-Year	1.8	37	27	30	29	4.2
Admission Criteria						
Open	3.1	65	77	74	78	6.6
Liberal.	.7	16	13	13	12	4.2
Traditional.	.4	9	5	6	5	2.8
Selective.	.5	10	4	7	6	3.0

[1]Estimated based on sum of reported total number of hours taken in remedial reading, writing, and math as a percent of the total number of first-year, full-time equivalent students multiplied by 30 hours (assumed FTE hours).

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Table 4.--Percent of institutions of higher education with remedial support services, pre-admission summer programs, department or division, other academic courses, and student development courses, by control, type of institution, and admission criteria: United States, 1983-84

Institutional characteristics	Number of IHE's having freshmen students	Percent of schools with remedial/developmental:				
		Support services	Pre-admission summer programs	Department or division	Other academic courses[1]	Student development courses[2]
All colleges .	2,785	90	24	33	21	58
Control						
Public	1,419	97	27	47	23	68
Private.	1,366	82	20	18	17	44
Type of institution						
2-year	1,295	94	15	43	28	71
4-year	1,491	86	31	24	14	45
Admission criteria						
Open	1,259	99	21	46	26	70
Liberal.	714	81	17	25	12	43
Traditional. . . .	354	93	34	23	16	58
Selective.	459	78	34	19	19	40

[1] Includes remedial courses in academic subjects other than reading, writing, or math (e.g., high school level science or social studies).

[2] Includes courses in such things as career planning, decision-making, and some study skills courses.

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Table 5.—Percent of institutions with various credit offerings and requirement status for remedial courses in reading, writing, and math, by control, type of institution, and admission criteria: United States 1983-84

Course characteristics	Institutional characteristics								
	All colleges	Control		Type		Admission criteria			
		Public	Private	2-year	4-year	Open	Liberal	Traditional	Selective
Type of credit: Reading									
No formal credit	18	13	27	19	16	17	11	14	42
Institutional credit	54	61	39	57	50	58	54	37	45
Degree credit elective	25	23	28	23	26	22	29	46	10
Degree credit subject	4	3	7	1	8	4	7	4	2
Type of credit: Writing									
No formal credit	16	13	22	12	20	12	5	22	44
Institutional credit	##	62	40	62	45	62	60	33	32
Degree credit elective	25	21	30	23	26	21	29	36	20
Degree credit subject	6	4	8	3	9	5	6	9	4
Type of credit: Math									
No formal credit	19	15	27	19	21	16	16	34	27
Institutional credit	52	60	38	57	45	57	57	26	43
Degree credit elective	23	20	28	20	27	21	24	31	25
Degree credit subject	6	5	8	4	8	7	3	9	5
Requirement status: Reading									
Mandatory	51	46	61	45	59	46	71	47	46
Voluntary	49	54	39	55	41	54	29	53	54
Requirement status: Writing									
Mandatory	64	58	74	54	73	56	79	60	75
Voluntary	36	42	26	46	27	44	21	40	25
Requirement Status: Math									
Mandatory	59	54	68	52	67	53	75	63	51
Voluntary	41	46	32	48	33	47	25	37	49

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Table 6.—Average ratings of remedial program aspects/services, by control, type of institution, and admission criteria: United States, 1983-84

Program aspect/service[1]	Institutional characteristics								
	All colleges	Control		Type		Admission criteria			
		Public	Private	2-year	4-year	Open	Liberal	Traditional	Selective
Course related									
Teacher motivation/attitude	4.2	4.1	4.2	4.1	4.2	4.1	4.2	4.3	4.1
Teacher training/experience	4.0	3.9	4.1	4.0	4.1	4.0	4.0	4.0	4.0
Curriculum content/structure	4.0	4.0	3.9	4.0	3.9	4.0	4.0	4.0	3.8
Breadth of offerings	3.4	3.6	3.2	3.6	3.3	3.6	3.5	3.5	3.0
Support services									
Training labs	3.9	3.9	3.8	3.9	3.9	3.9	4.0	4.1	3.7
Tutoring	3.8	3.8	3.9	3.8	3.8	3.8	3.9	3.8	3.7
Counseling	3.8	3.6	4.1	3.7	3.9	3.7	3.8	4.0	4.0
Support services	3.8	3.7	3.9	3.8	3.8	3.8	3.9	3.8	3.7
Diagnosis	3.6	3.6	3.7	3.6	3.6	3.6	3.7	3.6	3.6
Organization and policy									
Placement policy	3.8	3.7	3.9	3.7	3.9	3.7	3.9	4.0	3.6
Program coordination	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.4
Program evaluation	3.1	3.0	3.3	3.1	3.2	3.0	3.3	3.4	3.0
Outcome for remedial students									
Remedial course completion	3.9	3.6	4.0	3.6	3.9	3.6	3.7	4.1	4.1
Overall program success	3.7	3.6	3.8	3.6	3.7	3.7	3.8	3.7	3.7
Increased skill level	3.6	3.6	3.7	3.6	3.7	3.6	3.6	3.8	3.7
Improved self-concept	3.6	3.5	3.6	3.6	3.6	3.5	3.5	3.6	3.8
Degree completion rate	3.2	3.1	3.3	3.0	3.3	3.0	3.1	3.4	3.6

[1]Respondents rated each aspect on a scale of 1 to 5 (1 = low, 5 = high).

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Table 7.—Percent of students completing remedial courses, by reading, writing, and math, and percent of all freshmen and remedial freshmen retained to the second year, by control, type of institution, and admission criteria: United States, 1983-84

Institutional characteristics	Percent of students completing remedial course:			Percent of schools keeping records for retention to second year for:		Percent reported retained to second year:			
						Total freshmen		Remedial freshmen	
	Reading	Writing	Math	Total freshmen	Freshmen taking one or more remedial course	Schools keeping records	Estimates given: schools not keeping records	Schools keeping records	Estimates given: schools not keeping records
All colleges.	74	71	68	63	35	64	57	60	55
Control									
Public.	73	70	67	50	28	62	56	58	53
Private	85	82	81	75	42	70	74	70	65
Type of institution									
2-year.	71	68	68	47	26	55	54	55	50
4-year.	80	77	69	76	43	71	66	66	63
Admission criteria									
Open.	71	68	67	44	23	56	54	55	51
Liberal	78	73	69	75	44	65	60	63	57
Traditional . . .	87	83	75	77	44	70	72	64	64
Selective	85	83	76	81	47	79	83	76	74

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Table 8.--Standard errors of selected items

Item	Estimate	Standard error
Percent of colleges and universities having:		
Remedial writing course, all colleges	73.0	1.7
Remedial math course, private colleges	53.1	2.6
Average number of courses offered in remedial writing by private colleges	1.3	.4
Percent of public colleges in which remedial enrollment remained the same	25.7	1.6
Percent of freshmen students enrolled in:		
Remedial reading course, all colleges	16.4	1.2
Remedial writing course, 2-year colleges	23.2	.9
Remedial writing course, 4-year colleges	16.7	2.2
Remedial writing course, traditional admission colleges	12.8	4.5
Remedial writing course, selective admission colleges	14.1	2.7
Percent of colleges and universities having:		
Remedial pre-admission summer program, traditional admission colleges	34.4	3.2
Remedial department or division, all colleges	32.9	2.3
Remedial courses in academic subjects other than reading, writing or math, all colleges	20.5	2.3
Percent of colleges and universities awarding:		
Institutional credit for remedial writing, all colleges	53.5	2.2
No formal credit for remedial writing, traditional admission colleges	13.5	5.7
Percent of colleges and universities in which courses are mandatory for:		
Remedial writing, all colleges	64.0	2.9
Remedial reading, liberal admission colleges	70.5	5.1
Average rating on a scale of 1 to 5:		
Remedial curriculum, all colleges	4.0	.04
Overall remedial program success, all colleges	3.7	.03
Remedial course completion, 4-year colleges	3.9	.05
Average percent of remedial freshmen retained to second year	57.6	5.9
Average percent of total freshmen retained to second year	65.1	7.0

Note.--Statistics used in this report are subject to sampling variability. The estimated standard error of a statistic (a measure of the variation due to sampling) can be used to examine the precision obtained in a particular sample. If all possible samples were surveyed under similar conditions, intervals of 1.645 standard errors below to 1.645 standard errors above a particular statistic would include the average result of these samples in approximately 90 percent of the cases. For example, for the first item in the table (Percent of colleges and universities having remedial writing courses), a 90 percent confidence interval is from 69.9 to 76.1 (73.0 ± 1.645 times 1.7). If this procedure were followed for every possible sample, about 90 percent of the intervals would include the average from all possible samples.